

In re Patent Application of:

**BAGWELL ET AL**

Serial No. **09/932,640**

Filed: **AUGUST 17, 2001**

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In the Drawings:

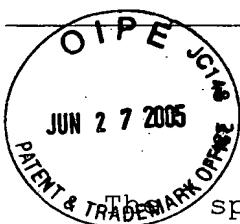
Attached is replacement drawing sheet 1.

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REMARKS

The specification has been reviewed and editorial corrections have been effected therein to eliminate minor typographical errors noted by applicants. In addition, Claims 4, 12 and 13 have been amended to insure antecedent basis for the objected to phraseology. Reconsideration of this application in light of the foregoing amendments and following remarks is respectfully requested.

The rejection of Claims 1-13, under the provisions of 35 U.S.C. 102, as allegedly being anticipated by the patent to Liu, 6,130,879, is respectfully traversed.

As is described in the initial portion of the present specification, the present invention takes advantage of the communication signalling processing capability and capacity of a multi-digital circuit servicing host integrated access device, to provide contemporaneous (i.e., at the same time) management of multiple remote digital communication devices by way of a respective robbed in-band (T1) channel per remote site, without having to terminate each high speed digital (T1) link within an associated TSU/ISU pair at the master site.

In particular, as defined in each of independent Claims 1, 6 and 10, contemporaneous management communication sessions are established with plural remote digital communication devices over robbed in-band digital communication channels of respective time-division-multiplex (TDM) digital communication links employed by the DSL communication units to conduct TDM digital communications with said plural remote digital communication devices. Once these management sessions have been established, user commands are transported over the robbed in-band digital communication

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channels to respectively address at ones of the remote devices during the contemporaneous management communication sessions.

The patent to Liu has nothing to do with this technique or apparatus therefor. Instead the patent to Liu, 6,130,879, is directed to a scheme for negotiating the data rate for a DSL connection between a DSLAM and a DSL transceiver and the dynamic routing of data based upon the type of data. The patentee describes an access, set-up and configuration process for setting up and dynamically configuring an optimal data path routing for an end-to-end data link connection by way of an "always-on" type connection.

The methodology and apparatus according to applicants' claims is not an always-on type connection, as described in Liu, by rather deals with the fact that the integrated access device can have multiple management sections active at any given time, namely they are contemporaneous (or at the same time), rather than being always-on.

The patent to Liu describes the conversion of voice signals to a pulse code modulation (PCM) stream, which has been alleged in the office action to be analogous to a time division multiplexed (TDM) digital communication link. Applicants respectfully disagree with this assessment.

PCM is a technique of converting an analog data stream into a digital signal, in which each sample of the digital signal indicates an approximate measure of the amplitude of the corresponding analog data stream. TDM, on the other hand, is a method of multiplexing multiple continuous digital data streams on to a single higher bandwidth data stream. Data from various input streams are carried or transported in repetitive frames on the output data stream. Each frame consists of a set of time

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slots and each source stream is assigned one or more time slots per frame. TDM has nothing to do with conversion of an analog signal to a digital signal and therefore, contrary to the assertion in the office action, is not analogous to PCM. In a complementary manner, PCM has nothing to do with the multiplexing of multiple source data streams onto a single data stream and is therefore not analogous to TDM.

The patent to Liu further indicates that an access router stage routes data to three main possible routes, one being a DS0 interface. What this has to do with the present invention is not clear to applicants, since the present invention is not directed to the routing of data streams. Certainly the present application makes use of the term DS0 interface in the course of describing the present invention. However, the in-band communication channel is not a DS0 interface, but rather another usage of TDM within the framework of a given DS0 interface. Attention may be directed to Figure 3 of the drawings of the present application, wherein the in-band communication channel consumes only 8 Kbps of bandwidth of a given DS0 interface instead of a full 64 Kbps of the DS0 interface. The remainder of the DS0 interface is still available for data transmission from the host to the remote units. The robbed in-band digital communication channel is not an DS0 interface.

In connection with the operation described in the patent to Liu, the patentee indicates that to start a connection, a DSL transceiver at the user CPE (customer premises equipment) talks to a remote DSLAM and negotiates a data transfer rate, as described, for example, in lines 5-23 of column 10 of the patent. The office action interprets this [negotiation of transfer rate] to be analogous to step (b) of Claim 1 of transporting user commands over the robbed in-band digital communications channel to respectively addressed ones of the remote devices during the

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contemporaneous management communication sessions. It is respectfully submitted that this interpretation is inaccurate.

In the first place, the user commands employed by the present invention do not control the initial connection parameters of establishment of a data communication link between a pair of end devices. The transporting of user commands pursuant to the invention requires an already established and fully operable communication link, using the robbed in-band digital communication channel.

Secondly, the transporting of user commands in accordance with the present invention involves an addressing scheme. This addressing scheme is used to identify which remote digital communication device is to respond to the user command. This scheme is employed because multiple remote devices may be capable of accepting user commands on a given in-band digital communication link. The negotiation of data rate as in the patent to Liu must be between the DSL transceiver and the DSLAM on the given point-to-point link between the DSL transceiver and the DSLAM. The negotiation of data rate as in the patent to Liu does not involve a third unit connected to the DSL transceiver, whereas user commands employed in accordance with the present invention may be addressed to a third unit at the remote site.

Thirdly, the negotiation of data rate of the communication link according to the scheme by the patent to Liu will have a non-deterministic effect on the performance and throughput of the given communication link, based on the rate negotiated. On the other hand, the transporting of user commands does not have any non-deterministic effects on the data transfer rate and performance of the communication link in accordance with the present invention. Basically, the present invention is able to

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send user commands without any side-effects (e.g., recalculating data rate) to the data throughput of the remote unit.

Fourthly, negotiating a data rate between two pieces of equipment with no human interaction during negotiation is non-equivalent to the transmission of human inspired and chosen user commands at any given point in time of the system up-time of the remote unit.

It will be readily appreciated, therefore, that negotiating a data rate is not analogous to transporting user commands. As demonstrated above, since the patent to Liu, 6,130,879, does not disclose or suggest the methodology or apparatus therefor in accordance with applicants' independent claims, it does not apply to the claims dependent thereon. Moreover, with respect to the comments regarding Claim 3 on page 4 of the office action, it should be observed that the CPE cannot potentially be a user management terminal. In the system described in accordance with the present invention, the user management terminal is located at the host site connected to the integrated access device and not at a customer premises. The term CPE is defined as customer premises equipment and thus must always reside at the customer premises. It is not a user management terminal by any stretch of the imagination.

In view of the foregoing discussion, withdrawal of the rejection of Claims 1-13 and a Notice of Allowability thereof are respectfully requested.

Applicants also request favorable consideration of a proposed change to the drawings to properly identify the labeling of block 13 in Figure 1 as a supervisory processor not a SUPERUS processor. The term "supervisory" has been abbreviated as SUPERVIS.

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The remaining prior art cited, but not employed in the outstanding office action has been reviewed and has been found to be not germane to the problem or the solution thereto offered by the present invention.

Favorable reconsideration of this application is, accordingly, respectfully solicited.

Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 01-0484 and please credit any excess fees to such deposit account.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: MAIL STOP AMENDMENT, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450, on this 24 day of June, 2005.

J. Kallmeyer